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### What Does a "Typical" Resistant Hypertension Patient Look Like?

#### Announcer:

Welcome to CME on ReachMD. This episode is part of our MinuteCME curriculum.

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#### Dr. Bakris:

Hello, I'm Dr. George Bakris, Professor of Medicine and Director of the American Heart Association Comprehensive Hypertension Center at the University of Chicago Medicine in Chicago, Illinois. Today, I'm going to speak to you as, what does a typical resistant hypertension patient look like? As you can see, there are two different definitions. They seemingly are different, but they're really not. The definition of resistant hypertension is a failure to achieve a goal blood pressure of less than 130/80, despite adhering to full doses of an appropriate three-drug antihypertensive regimen.

And that regimen needs to consist of an appropriate diuretic for kidney function, a calcium channel blocker, and a blocker of their renin-angiotensin system and the ACEI and ARB. Apparent resistant hypertension is that they claim they're taking all their medicines but they're not. They're not adherent, they're taking some of their medicine or they're taking none of their medicine. True resistance is they meet that definition and they're taking all of their medications. So the major difference is that the apparent resistant hypertensive you're trusting them that they're taking the medicine, which in fact they're not.

And the true resistant is, the two most common non-disease causes for apparent resistant hypertension are white coat hypertension, I'm sure you're very familiar with that. And they're usually related to anxiety and poor medication adherence, and with that, you can say dietary adherence. All of the following need to be present before diagnosing someone as having true resistant hypertension. One, obviously adherence not only to medications but to a low sodium diet. Number two, good sleep quality. Not just the presence of sleep apnea that hasn't been treated, that's part of it. But the other part of it is they have to be getting a minimum of six hours of uninterrupted sleep a night. Third, they have to look at their medications. You have to look at their medications. Are they on the maximal doses of drugs that they should be on? And are they on appropriate drugs?

There are major differences, for example, between angiotensin and receptor blockers within the class, Losartan, and for example, Olmesartan. There's as much as a seven millimeter difference in blood pressure if you add Olmesartan to substitute for Losartan. Likewise, chlorthalidone and indapamide are longer acting diuretics and give you far better blood pressure control and additional five to seven millimeter reduction over hydrochlorothiazide. So those all have to be thought about. And lastly, and most importantly, you have to think about ruling out secondary causes of hypertension, of which the most common is primary hyperaldosteronism. So, important to rule out primary hyperaldosteronism in addition to making sure all of the other issues that I've just mentioned are present.

Now, bottom line is this is a table adapted from the JNC 7, and also reproduced in the ACC/AHA Guidelines of 2017. And it tells you specific lifestyle interventions and how much of a blood pressure effect you can get from it. It's very important to look at this rather than just giving lip service to lifestyle modifications because they can actually reduce pill counts in these patients. And I can give you anecdotes of people that I've had referred to me who have stopped all their medication because they adhered the lifestyle and they never did before. Very important.

Sleep and insomnia, bottom line here is if you're getting less than five hours of sleep a night that is a major contributor not only to resistant hypertension, but also to high variability in blood pressure, which is not good. This is the nurse's health study, very important study. 10 year follow up of women, 71,000 plus women, that were seemingly healthy. These are nurses, and you can see here, the nurses that were getting six hours of sleep a night had a 30% higher risk for developing coronary disease. That's six hours, 30% for coronary disease. This is a study that we did looking specifically at sleep quality in referrals to our hypertension center for high variabilities in blood pressure. All of these people had in common that they were sleeping five hours or the less a night for period of months. And the bottom line here is we got them all sleeping a minimum of six hours a night or longer through a variety of behavioral techniques and sleep medications. The 50% that had sleep apnea were on treatment for sleep apnea when they came to us and they were adherent with a treatment and you can see here, very nice reduction in blood pressure.

Many people had one medication removed, other medication doses reduced. It's a very powerful message. So, I want to leave you with the notion that you have to be using appropriate medications per the guidelines and you have to be thinking about things other than just giving medication if you want to maximally treat resistant hypertension and this is what they look like. Thank you very much for your time and for listening.

**Announcer:**

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